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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,349	01/11/2002	Hideaki Yamamura	52433/674	6400

26646 7590 07/02/2004

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NEW YORK, NY 10004

EXAMINER

MCHENRY, KEVIN L

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 07/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Application No.

10/031,349

Applicant(s)

YAMAMURA ET AL.

Examiner

Kevin L McHenry

Art Unit

1725

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 20 May 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☒ A Notice of Appeal was filed on 20 May 2004. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ they raise the issue of new matter (see Note below);
- (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: 1-13, 17-19 and 21-24.

Claim(s) objected to: _____.

Claim(s) rejected: 20 and 31.

Claim(s) withdrawn from consideration: _____.

8. ☐ The drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____.
10. ☐ Other: _____

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Continuation of 5. does NOT place the application in condition for allowance because:

The applicant argues with supporting references that an oxide of metal is not more wettable with liquid metals than a pure metal. (See page 6, lines 11-14 of response). This is not the assertion of the previous office action; the action stated that cobalt oxidizes more readily than nickel and that oxides are more compatible with scum and oxides than pure metals. Pure metals are not scum or oxides. Therefore whether cobalt, its oxides, or other oxides are more compatible with pure metals than metals is not at issue.

The applicant notes a second reference, "Calculation of the Interfacial Properties of Liquid Steel - Slag Systems". This reference includes discusses the contact angles (an indication of free energy) between slags and refractories such as oxides, iron, and steel. (See Table 3). The applicant argues that this table shows that oxides are not more compatible with scum than metals, such as iron or steel. The applicant's argument is unpersuasive because Table 3 uses different slag systems between the oxides, iron, and steel. Comparing the contact angle of different slag systems between oxides and metals is not dispositive. In fact, only one slag system is used in common between an oxide and a metal -- the CaO-silica-alumina (40/40/20) system. This slag was tested on MgO and on iron. (See entries 7 and 11 in Table 3). The results show a contact angle of 9-32 for MgO and an angle of 30-60 for iron. If anything, Table 3 shows that iron has a greater contact angle than MgO for the same slag system.

The applicant argues that the cooling drum taught by JP 09-103849 in view of Tanaka does not teach the claimed dimples and fine holes. As noted in the previous action, the dimples taught by JP 09-103849 read upon the fine holes. There is no cited location for the fine holes (i.e. inside dimples) except that they are on the surface of the drum. The applicant further argues that the fine holes are different from the dimples of JP 09-103849 but does not explain how, other than to say that there is a synergy between the dimples and fine holes.

